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A unique feature of triaxial nuclei is the possibility of uniform rotation around an axis which is out of the three symmetry planes of the mean-field ellipsoid. This type of rotation leads to a spontaneous breaking of chiral symmetry which manifests itself in a pair of degenerate rotational bands [1]. Such chiral partner bands were first observed in the A$\sim$130 region in the odd-odd nuclei [2]. Recently evidence for chirality has also been reported in the odd-odd ^{104,106}Rh isotopes [3,4]. Three perpendicular angular momentum components can, however, also be formed in more complex systems, for example, in three-quasiparticle configurations of odd-A nuclei. Observation of degenerate rotational bands in odd-A nuclei provides further support for the concept that chirality has a primarily geometric character, and hence it is not restricted to odd-odd nuclei. The first evidence for chirality in a three-quasiparticle configuration was reported recently in ^{135}Nd [5]. In the present work we report evidence for a similar type of configuration in ^{105}Rh in the new A$\sim$104 region.

High-spin states in ^{105}Rh were studied in a recent Euroball experiment using the ^{96}Zr(^{13}C,p3n) reaction. A new high-spin band have been observed which forms a same parity nearly degenerate doublet structure with the previously known $\pi g_{9/2}\nu(h_{11/2})^2$ band. The observed near degeneracy and similar electromagnetic properties of the two bands suggest a chiral nature for the structure. This chiral nature is supported also by comparison with tilted axis cranking calculations, while other realistic possibilities to explain the characteristics of the observed partner band structure can be excluded. ^{105}Rh is the first nucleus in which the chiral nature of the partner band structure is supported also by comparison of the behaviour of the partner band with the observed γ-vibrational band.

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